

Title (en)

Shuttle system for rapidly manipulating a workpiece into and out of an atmospherically controlled chamber.

Title (de)

Pendel-Trägersystem zum schnellen Manipulieren eines Werkstückes in einem und aus einem bezüglich seiner Atmosphäre überwachten Raumes.

Title (fr)

Système de va-et-vient pour manipuler rapidement une pièce à travailler à l'intérieur et à l'extérieur d'un compartiment avec atmosphère contrôlée.

Publication

EP 0392704 A1 19901017 (EN)

Application

EP 90303380 A 19900329

Priority

US 33234689 A 19890331

Abstract (en)

An automated workpiece handling system rapidly moves a workpiece (127) into a controlled atmosphere chamber (11) such as a vacuum chamber, to a work station and withdraws the piece (127) after the work has been completed. While at the work station, the handling system manipulates the piece (127) linearly and in rotation, as desired, according to a set program. The workpiece (127) is loaded and unloaded at the same location outside the chamber (11), at atmosphere pressure. A split piston having a headstock (49) and tailstock (50) holds the workpiece (127). The piston seals the vacuum chamber (11) during loading and unloading, and during the work cycle. During transfer into the vacuum chamber (11), pressure around the workpiece is reduced. A pneumatic counterbalance system (111,143,141,109) reduces the loading on the piston drive system caused by the pressure differential between the vacuum chamber (11) and atmosphere.

IPC 1-7

B23K 15/00

IPC 8 full level

B23K 15/06 (2006.01); **H01J 37/18** (2006.01); **H01L 21/00** (2006.01); **H01L 21/677** (2006.01)

CPC (source: EP US)

B23K 15/06 (2013.01 - EP US); **H01J 37/18** (2013.01 - EP US); **H01L 21/67126** (2013.01 - EP US); **H01L 21/67748** (2013.01 - EP US); **Y10S 414/139** (2013.01 - EP US)

Citation (search report)

- [X] US 4266111 A 19810505 - TRILLWOOD RICHARD E
- [Y] PATENT ABSTRACTS OF JAPAN
- PATENT ABSTRACTS OF JAPAN

Designated contracting state (EPC)

BE DE ES FR GB SE

DOCDB simple family (publication)

EP 0392704 A1 19901017; **EP 0392704 B1 19931020**; DE 69003985 D1 19931125; DE 69003985 T2 19940210; US 4968206 A 19901106

DOCDB simple family (application)

EP 90303380 A 19900329; DE 69003985 T 19900329; US 33234689 A 19890331